IIOTSYS™
IoTSwitch

User Manual
iiotsys™ IoT Switch (Mobile Application)

Android: iot-switch-v1.56.13

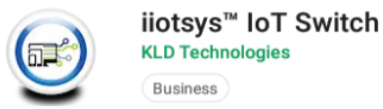# User Manual: iiotsys™ IoT Switch (Mobile Application)

This iiotsys™ IoT Switch is designed to be setup using a Mobile Application available on Google Play Store or by use of our free software home automation server iiotsys™ (Web Application).

WARNING! - Please adhere at all times to the electrical specification limits of the IoTSwitch Model that you have purchased.
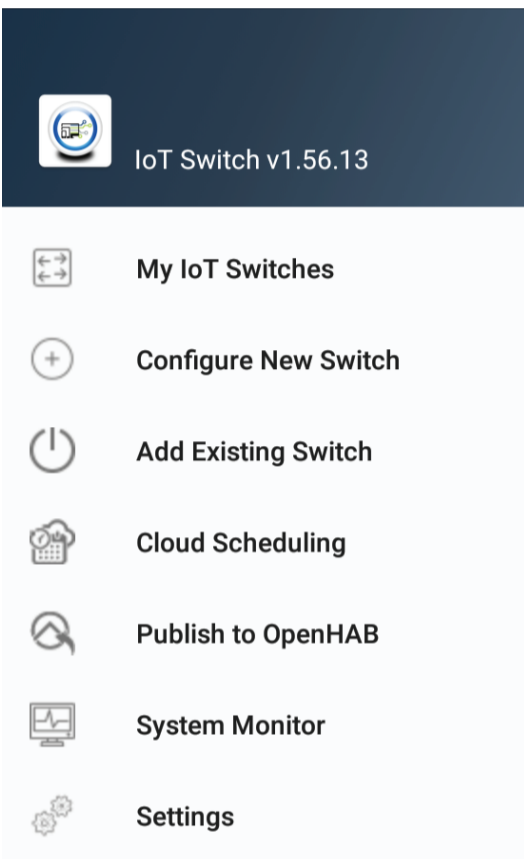CAUTION! - Changing parameters or values with the iiotsys™ (Web Application) interface can cause the IoTSwitch to become out of Sync with the Android Application.

Download and install the iiotsys™ Mobile App from Google Playstore

Open Playstore on your mobile phone, search for iiotsys. Click install and follow the prompts.

iiotsys™ IoT Switch
KLD Technologies
Business

The main menu

IoT Switch v1.56.13

- My IoT Switches
- Configure New Switch
- Add Existing Switch
- Cloud Scheduling
- Publish to OpenHAB
- System Monitor
- Settings

My IoT Switches
Provides a list of IoT Switches that have been configured and are available to be controlled, published to openHAB, or scheduled.

Configure New Switch
Configures a new IoT Switch that has not been setup, the first configuration of this switch becomes the switch owner. The switch owner has access to all switch details, can reset the switch and allow non-owners to create schedules for IoT Switches.

Add Existing Switch
Re-adds a IoT Switch that was previously configured, this option will re-add the switch with limited detail if the user adding this switch was not the owner. If the owner deleted the switch and re-adds the same IoT Switch the IoT Switch will again be re-added with all switch details.

Cloud Scheduling (*in-app purchase*)
Scheduling adds timer and loop functions that automate the control of the IoT Switch independantly of the Mobile Application connectivity.

Publish to openHAB (*in-app purchase*)
Creates cloud accounts for openHAB MQTT and publishes selected IoT Switches to local openHAB server through the application program interface.

System Monitor
Displays messages of IoT Switch subscriptions and activity.

Settings
Submit support data, restore or make in-app purchases or reset all data.

Configure New Switch

≡ IoT Switch

Please complete the following fields to configure a new switch. All fields are required.

Name for your Switch

Description for your Switch

Please select a switch type, Pulse / Toggle or Pulse & Toggle

- ○ Pulse
- ● Toggle
- ○ Pulse & Toggle

Please supply wireless confguration to connect the switch to your WiFi network

Your WiFi SSID

Your WiFi Password

Please supply wireless confguration for the switch Access Point

Switch AP WiFi SSID

Switch AP WiFi Password

Configure this switch for cloud?

Allow Scheduling of this switch?

Your Email Address

Password for Cloud

CONFIGURE AND SAVE SWITCH

Name for your Switch
Name for your Switch as it will appear in the Switch list (My IoT Switches), make this a logical name that can also be easily used for voice control.

Description for your Switch
Friendly description that helps further define the switch and appears when viewing the switch details. This can be the same as the Name entered above.

Pulse, Toggle or Pulse & Toggle
Switch type defines whether this in a on / off switch (Toggle) or a momentary trigger switch (Pulse) or both. The switch type can be changed after the switch has been configured in the edit switch pop-up menu.

Your WiFi SSID
Enter the SSID for your local WiFi network. The IoT Switch will connect to this network. This network is defined as the station network.

Your WiFi Password
Enter the password for your local WiFi network.

Switch AP WiFi SSID
The IoT Switch acts as an access point, enter a unique SSID that the IoT Switch will broadcast for direct connection. Recommendation is to use underscores instead of spaces. This network is defined as the SoftAP network.

Switch AP WiFi Password
Enter a password for the SoftAP network.

Configure this switch for cloud
When enabling this function will create the necesary cloud accounts so that the IoT Switch can be securely controlled from the local network and from the internet. Cloud scheduling is dependant on this option being enabled.

Allow Scheduling of this switch
Enable this option to enable the IoT Switch to be scheduled from cloud services and non-owner users.

Enter a email address and password that will uniquely identify the owner of this IoT Switch. This option will only be available on the first IoT Switch that is added, thereafter the email address and password will be stored and remembered for every consecutive new or existing switch added.

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Checks to be done before adding a new IoT Switch

Pre-Flight Checks

Ensure your IoT Switch is installed and powered up. ✅

Ensure at least 20% battery power remaining on your Mobile Device ✅

Close all open applications on your mobile device ✅

The iiotsys mobile app is installed and ready ✅

Ensure Performance mode and Power saving features are disabled ✅

You are on your local network and within 10 meters from the IoT Switch ✅

NOTE!
- Ensure one IoT Switch is setup at a time.
- Failure to follow these guidelines can result in failure of the Mobile App to configure your new IoT Switch

Configuring your new Switch, this may take a moment...

Configuring Switch WiFi Station
   Waiting for switch to reboot
   Getting Station Configuration
Station Configuration - OK
Configuring Switch WiFi Access Point
   Waiting for switch to reboot
Soft AP Configuration - OK
Creating Cloud Account(s) - OK
Configuring Switch Cloud Account
   Configuring Cloud Account on Switch
   Configuring Cloud Control Strings
Switch Cloud Configuration - OK

Successfully configured the new switch! Please note that it may take up to a minute for the switch to register with Cloud.

OK

Once details have been completed click the CONFIGURE AND SAVE SWITCH button at the bottom of the screen.

Please be patient during this process as several components are configured seamlessly.

NOTE!
The most common issues during configuration are related to the pre-flight checks not being done.

The second most common issue is the failure to configure the Station (Local WiFi) , please check your local WiFi network SSID and password are correct, click OK to the failure notification and click again on the CONFIGURE AND SAVE SWITCH button to re-run the configuration.

- The Local WiFi SSID and Password for your local WiFi are case sensitive.
- IoT Switches cannot be added or configured when connected from the internet.

My IoT Switches list

Once the new switch has been configured it will appear under the My Iot Switches list. Depending on the switch type selected the Pulse and Toggle or Pulse or Toggle control buttons will be visible.

Any action will be confirmed by a short vibration as a tactile feedback when working with the type buttons.

≡ IoT Switch
🔵 Demo Switch   PULSE OFF

Default view of the added switch in a off state.
The LED illumination is dependant on confirmation of the Switch state (please see below)

≡ IoT Switch
🟢 Demo Switch   PULSE ON

Default view of the IoT Switch when turned on.
The GREEN LED will only illuminate when the IoT Switch has turned on and has confirmed that it is on back to the local or cloud service (please see the Configure New Switch section for local and cloud configurations)

≡ IoT Switch
🟡 Demo Switch   PULSE OFF

Default view of the IoT Switch when pulsed.
The YELLOW LED will momentarily illuminate and then extinguish when the IoT Switch has confirmed that it has switched on for one second and then turned off to the local or cloud service. (please see the Configure New Switch section for local and cloud configurations)

≡ IoT Switch
🔵 Demo Switch   PULSE OFF

Switch Detail

Edit Switch

Cloud Schedule(s)

Long press and hold on any IoT Switch in the list will produce a pop-up menu.

Switch Detail will display the details of the switch. The switch owner will have elevated priviledges. Any additional user that adds the switch as an existing switch will have limited switch details and priviledges.

Lock symbol on the IoT Switch LED indicates that the IoT Switch is locked.

(Please see switch details section for more details)

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Switch detail (owner)

Demo Lamp

Demonstration

Switch Information

Current Switch State:	OFF
Switch Model:	IoT-IIoTSys-01-PTR-SWI
Switch Version:	Cloud_v50.7
Build Version:	iot-iiotsys-01-ptr_swi-v50.7
IP Address:	192.168.2.86
MAC Address:	84:F3:EB:94:B5:18

Wireless Configuration

Station SSID:	MyNetwork
Station Password:	mysecret
AP SSID:	Demo_Lamp
AP Password:	mysecret

Switch Cloud Configuration

Cloud Server:	cloud.iiotsys.co.za
Cloud Port:	1883
Cloud Key:	c627c2d84bfc4f7b921f95dc
Cloud Username:	Demo_Lamp_eb14bc50
Cloud Password:	8e48fdd547a349a3
Cloud Scheduling:	Enabled

Switch Cloud Control

Control ON:	d1d1349
Control OFF:	36fe24e
Control PULSE:	6dd5dbe
Control STATE:	1b023d1
Control STATUS:	3353f01
Control REBOOT:	e210904
Control RESET:	950388f
Control LOCK:	c017927
Control UNLOCK:	2585a16
Control ADDRESS:	4971ba1
Control UPDATE:	86805b8

User Cloud Account Configuration

Cloud Username:	someone@somewhere.com
Cloud Id:	df138616

TOGGLE POWER	PULSE SWITCH
GET STATUS	GET STATE
TOGGLE AP SSID	ENABLE CLOUD
GET SWITCH IP	Cloud Scheduling 🔵
REBOOT SWITCH	RESET SWITCH
DELETE SWITCH	
RESTORE SWITCH	Lock Switch ⚪
UPDATE FIRMWARE	BACK TO SWITCH LIST

Switch Information
General Information defining the state, IoT Switch model, version and build. The current IPv4 address of the IoT Switch on the network and the MAC (Media Access Control) address of the IoT Switch.

Wireless Configuration
Station configuration information defining the local WiFi network that the IoT Switch is connected to, Station SSID and Password. The SoftAP information defining the access point SSID broadcast by the IoT Switch and asociated password used if connecting directly to the IoT Switch.

Switch Cloud Configuration
The cloud server cluster and port that the IoT Switch is connecting to for MQTT services (note that this information will not be present if the IoT Switch is not enable for cloud when configuring the new IoT Switch). The unique 24 character key that identifies this IoT Switch on the cloud Platform. The local IPv4 and MAC address of the IoT Switch. The IPv4 address is updated when querying the IoT Switch IPv4 address (see GET SWITCH IP below)

Switch Cloud Control
Each function of the IoT Switch is actioned by unique 7 character keys. The keys for each function (right) is listed for each corresponding function (left).

User Cloud Account Configuration
Unique cloud identifier and email address of the registered owner.

FUNCTIONS
Functions available to enhance management and testing of your IoT Switch.

TOGGLE POWER
Clicking on this button will toggle the IoT Switch ON and OFF respectively. Confirmation of the action will be in the form of a pop-up notification confirming the IoT Switch has actioned the request.

PULSE SWITCH
Clicking on this button will PULSE the IoT Switch, confirmation of the action being executed by the IoT Switch will be in the form of a pop-up notification.

GET STATUS
Clicking this button will query the switch and return the IoT Switch real-time status, either ONLINE, or NULL for OFFLINE. The result will be in the form of a pop-up notification.

GET STATE
Clicking this button will query the switch and return the IoT Switch real-time state, either ON or OFF. The confirmed state will be in the form of a pop-up notification.

TOGGLE AP SSID
Clicking this button will HIDE (If not HIDDEN) or UNHIDE (if not UNHIDDEN) the SOftAP SSID broadcast. The confirmation of this action will be in the form of a pop-up notification. (Please note that this is mandatory to be run whilst connected to your local WiFi (Station) network.

ENABLE CLOUD
Clicking this button will release the IoT Switch from local control if another user added the same IoT Switch as local only and has finished controlling it. Registration of the IoT Switch to cloud control is within 60 seconds or less provided the Station network has internet access.

GET SWITCH IP
Local WiFi Station network IPv4 addresses is managed by one or another DHCP (Dynamic Host Control Protocol) lease, dependant on the lease period the IoT Switch will be issued with a new IPv4 address, clicking this button will query the current or realtime IPv4 address currently issued to the IoT Switch and return the IPv4 address. The IPv4 address will be shown in the form of a pop-up notification.
Should the IPv4 address have changed then it will be stored and the updated IPv4 address will be visible in the Switch Information.

Cloud Scheduling
Enable this option to enable the IoT Switch to be scheduled from cloud services and non-owner users.

REBOOT SWITCH
Clicking this button performs a soft reboot of the IoT Switch firmware. Confirmation will be in the form of a pop-up confirming that the IoT Switch has restarted.

RESET SWITCH
Clicking this button will perform a factory reset of the IoT Switch and remove the IoT Switch from the switch list. If this was the last IoT Switch a option will be provided to also delete the cloud account for the mobile device. Each stage of the process will be confirmed in several pop-up messages.

DELETE SWITCH
Clicking this button will delete the switch from the IoT Switch list, if this was the last IoT Switch then the option will be provided to also remove the cloud account for the Mobile device. The IoT Switch can be re-added as an existing IoT Switch.

RESTORE SWITCH
Clicking this button will restore all the configuration to a unconfigured switch, unconfigured switches can be as a result of a firmware upgrade, hard reset or simply a replacement.

LOCK SWITCH
Click this toggle button to lock and unlock the IoT Switch Web user interface and prevent any non - owners adding this IoT Switch to their Mobile App or openHAB server or from making any unauthorised changes.

UPDATE FIRMWARE
Clicking this button will check for the latest firmware and perform a OTA (Over The Air) firmware update if new firmware is available.

BACK TO SWITCH LIST
Click this button to return to the main menu.

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Switch detail (non-owner)

When the IoT Switch is added as an existing switch by a non-owner then the information and controls are limited for security reasons.
If the IoT Switch is deleted and re-added by the owner then all the IoT Switch details and priviledged controls are restored.

A non-owner cannot enable scheduling or otherwise reveal or reset a IoT Switch. When a non-owner is authorised to add an existing switch it is recommended that although you join their mobile device to your local WiFi network that you do not reveal your cloud credentials.

If you are a body corporate or a manager for access at a location having multiple users that you record the cloud ID of each of your tenants. This information provided to us will allow the support team to revoke access for this user.
Please also note that we will only accept the authorization to remove a user if the email requesting same originates from the owners email address.
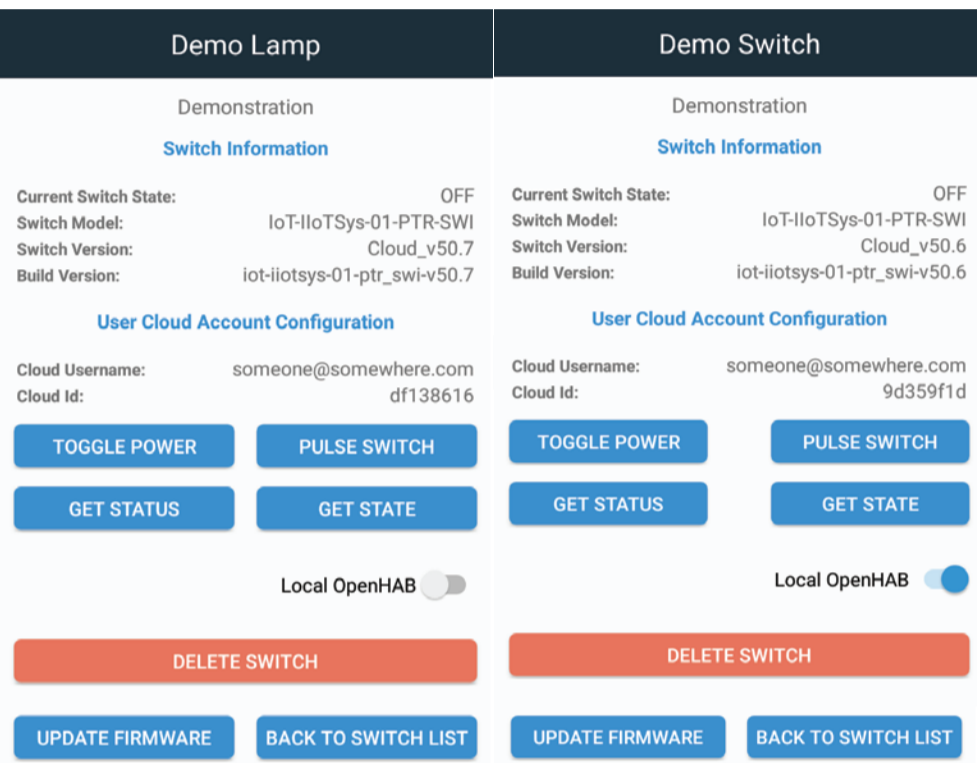
Switch Information
General Information defining the state, IoT Switch model, version and build. The current IPv4 address of the IoT Switch on the network and the MAC (Media Access Control) address of the IoT Switch.

User Cloud Account Configuration
Unique cloud identifier and email address of the registered owner.

FUNCTIONS
Functions available to enhance management and testing of your IoT Switch.

TOGGLE POWER
Clicking on this button will toggle the IoT Switch ON and OFF respectively. Confirmation of the action will be in the form of a pop-up notification confirming the IoT Switch has actioned the request.

PULSE SWITCH
Clicking on this button will PULSE the IoT Switch, confirmation of the action being executed by the IoT Switch will be in the form of a pop-up notification.

GET STATUS
Clicking this button will query the switch and return the IoT Switch real-time status, either ONLINE, or NULL for OFFLINE. The result will be in the form of a pop-up notification.

GET STATE
Clicking this button will query the switch and return the IoT Switch real-time state, either ON or OFF. The confirmed state will be in the form of a pop-up notification.

LOCAL OPENHAB
Clicking this toggle button will ensure local only IoT Switches remain online with openHAB

DELETE SWITCH
Clicking this button will delete the switch from the IoT Switch list, if this was the last IoT Switch then the option will be provided to also remove the cloud account for the Mobile device. The IoT Switch can be re-added as an existing IoT Switch.
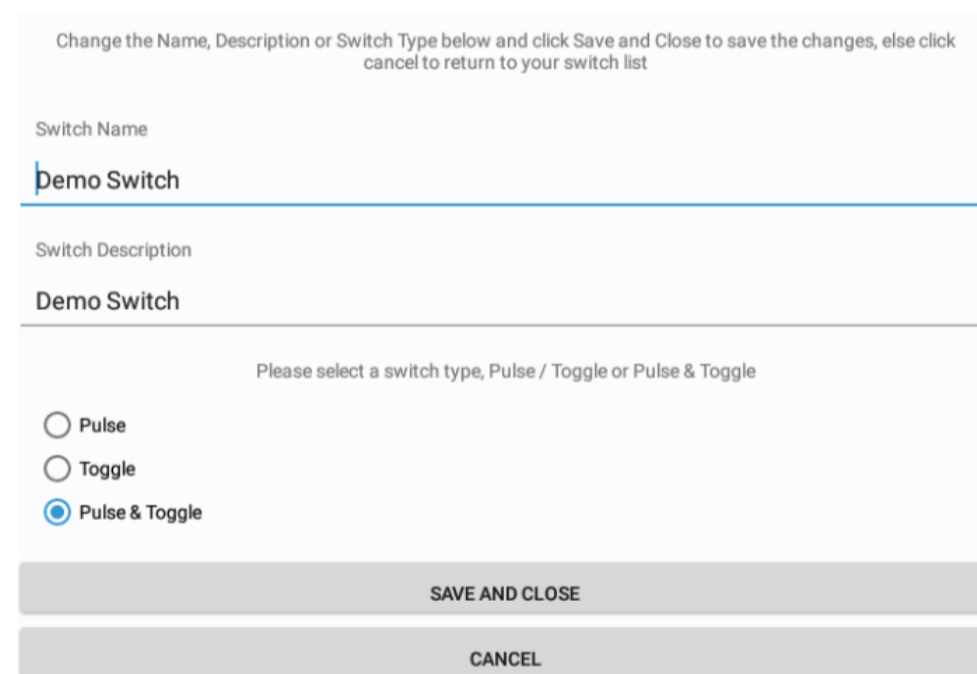
UPDATE FIRMWARE
Clicking this button will check for the latest firmware and perform a OTA (Over The Air) firmware update if new firmware is available.

BACK TO SWITCH LIST
Click this button to return to the main menu.

Edit Switch (non-owner and owner)

Editing Switches
The IoT Switch Name, Switch Description (Friendly) name and Switch Type can be changed at any time by using the Switch Edit menu.

Edit the Switch Name, Switch Description or Switch Type to suit your needs and then click the SAVE and CLOSE button to apply your changes and return to the Main Menu. Click the CANCEL button if no changes are required. Both the SAVE and CLOSE and CANCEL buttons return to the Main Menu.

Switch Name
This is the name of the IoT Switch as it will appear in the Switch List.

Switch Description
This is the Switch Description as it will appear in the Switch Detail, Switch Information.

Switch Type
Switch type defines whether this in a on / off switch (Toggle) or a momentary trigger switch (Pulse) or both.

PULSE CHANGE
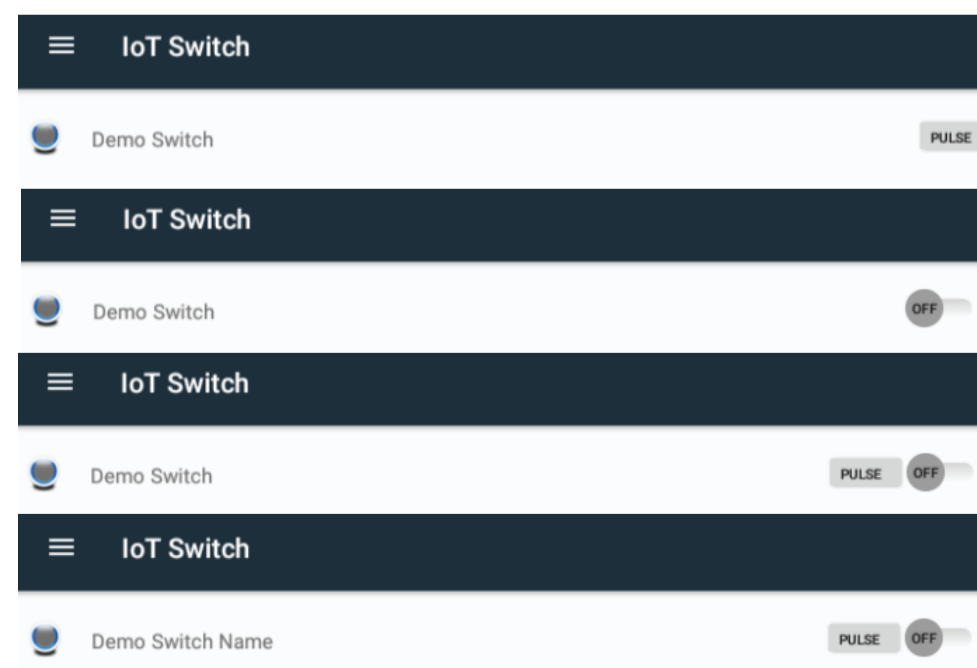Example to the left shows the Switch Type changed to PULSE only.

TOGGLE CHANGE
Example to the left shows the Switch Type changed to TOGGLE only.

PULSE AND TOGGLE CHANGE
Example to the left shows the Switch Type change to PULSE & TOGGLE.

SWITCH NAME CHANGE
Example to the left shows the Switch Name changed from DEMO SWITCH to DEMO SWITCH NAME.

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Cloud Scheduling (in-app purchase)

Cloud Scheduling is a in-app purchase when using more than one schedule (please see settings section). Click the Cloud Scheduling option form the Main Menu.

Important Concepts:
Scheduling concept is broken down into two basic steps, creating schedules, and then linking them to IoT Switches in the Switch List using the press-and-hold pop-up menu Cloud Schedules(s) Menu. When linking the Schedule created to the IoT Switch, it is linked as ON / OFF or PULSE event.
Once a schedule is created and linked to a IoT Switch in the Switch List the Cloud Scheduling Service ensures that the events are sent to the IoT switch regardless of the state of the Mobile App on your Mobile Device. Cloud scheduling works independantly of local home automation servers.
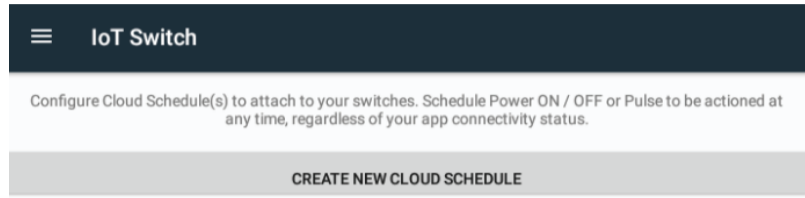
Click CREATE NEW CLOUD SCHEDULE.
In the examples below (First Schedule) is a once off event due to start at 19:49 12-11-2018
(Second Schedule) ocurrs hourly and starts at 20:03 and ends at midnight 13-11-2018
(Third Schedule) ocurrs daily, every day of the week, no repeats, as the schedule stops on 13-11-2018 it will only run once on the 12-11-2018 at 20:04.
(Fourth Schedule) runs weekly at 20:04, repeat weeks is one, the end date is optional in all four Schedules
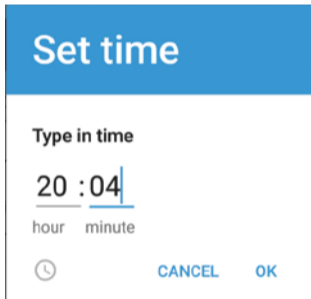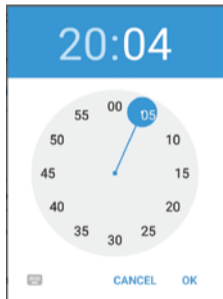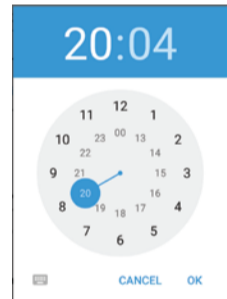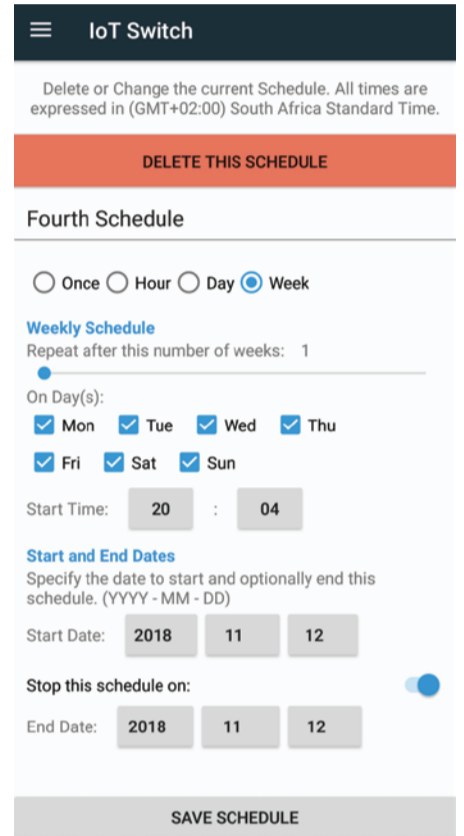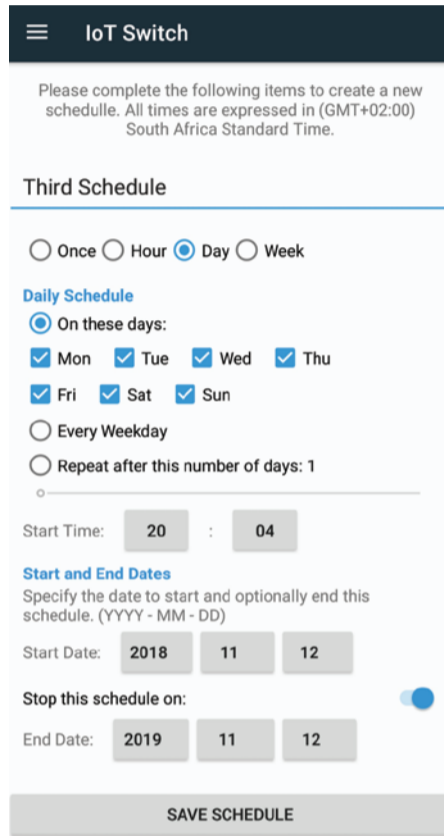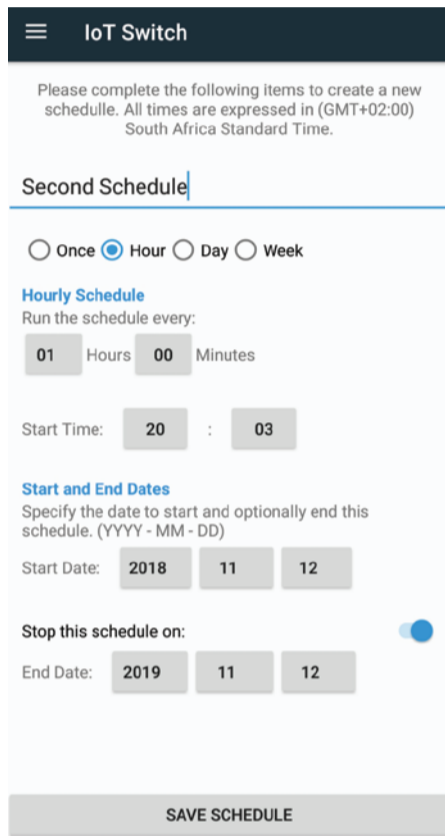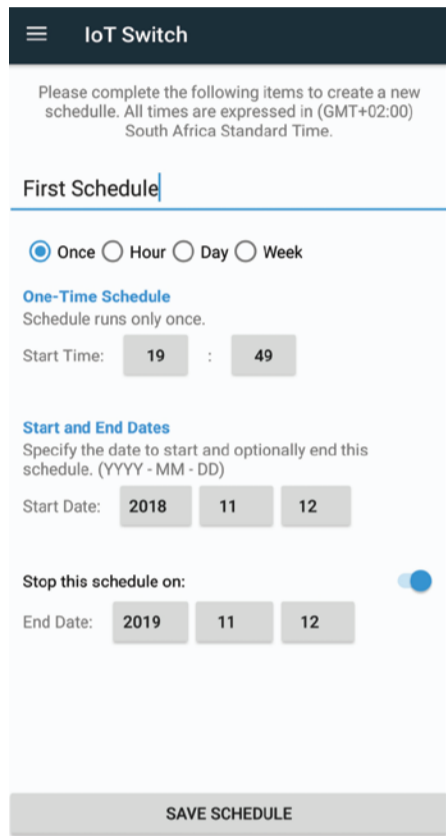
When setting the Hours, Minutes, the analog pendulums can be dragged to the desired value.
If digital entry is preferred click the keyboard icon in the bottom left of the set time window and use the numeric keypad on your mobile device to set the hours and minutes required.

Standard calendar is used to select, year, month and date.

Attaching Schedules to IoT Switches.
Create the number of schedules required, each with a unique name, in these examples First, Second, Third and Fouth Schedules were created (below far left). In the example below a long press-and-hold on the desired switch from the Switch List then select Cloud Schedule(s) from the popup menu. Click the drop down next to Please select a Schedule, in the example below (second from far left) the first schedule was selected and linked as a ON event (third from far left below). A long press-and-hold will generate a pop-up menu allowing the linked schedule to be unlinked.
Schedules can be linked as ON / OFF or PULSE events to any IoT Switches in the switch list.
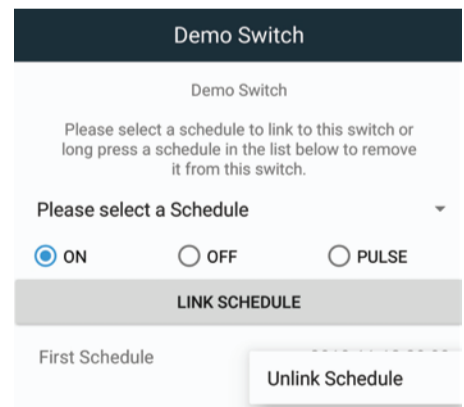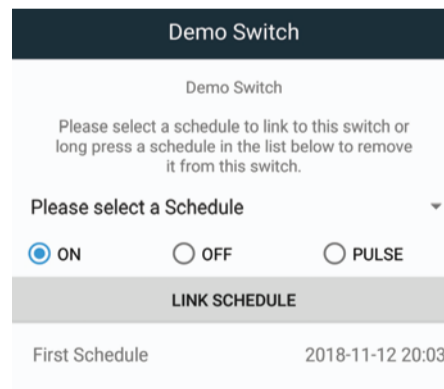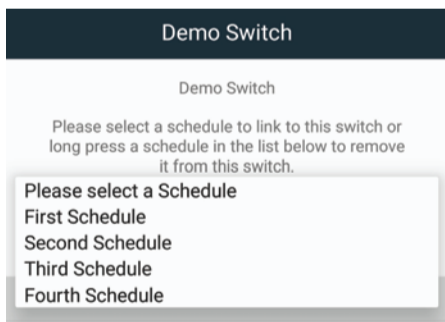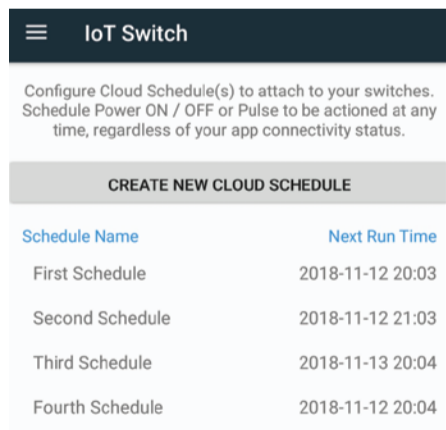
NOTE!
IoT Switches cannot be deleted if they have Schedules linked to them.
*Schedules cannot ne deleted if they are linked to any IoT Switches.*

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Publish to OpenHAB (in-app purchase)

Publish to OpenHAB is a in-app purchase (please see settings section). Click the Publish to OpenHAB option form the Main Menu.

Important Concepts:
The publish to OpenHAB API interface to iiotsys™ openHAB server software requires that at least one IoT Switch exists in the Switch List. The API will also create the first Server cloud account for the owner. Each owner is permitted to have one free cloud account for a openHAB server instance. multiple openHAB servers belonging to the same owner can use the same cloud account belonging to the owner. non-owners cannot create server cloud accounts and owners cannot create more than one server cloud account. These rules apply to the iiotsys™ eco systems and not the openHAB cloud connector covered in the iiotsys™ (Web Application) user manual.
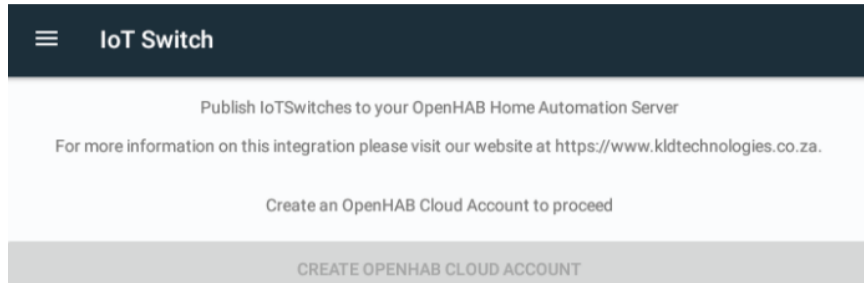
Click on the Publish to OpenHAB option from the Main Menu.
Click on the CREATE OPENHAB CLOUD ACCOUNT.
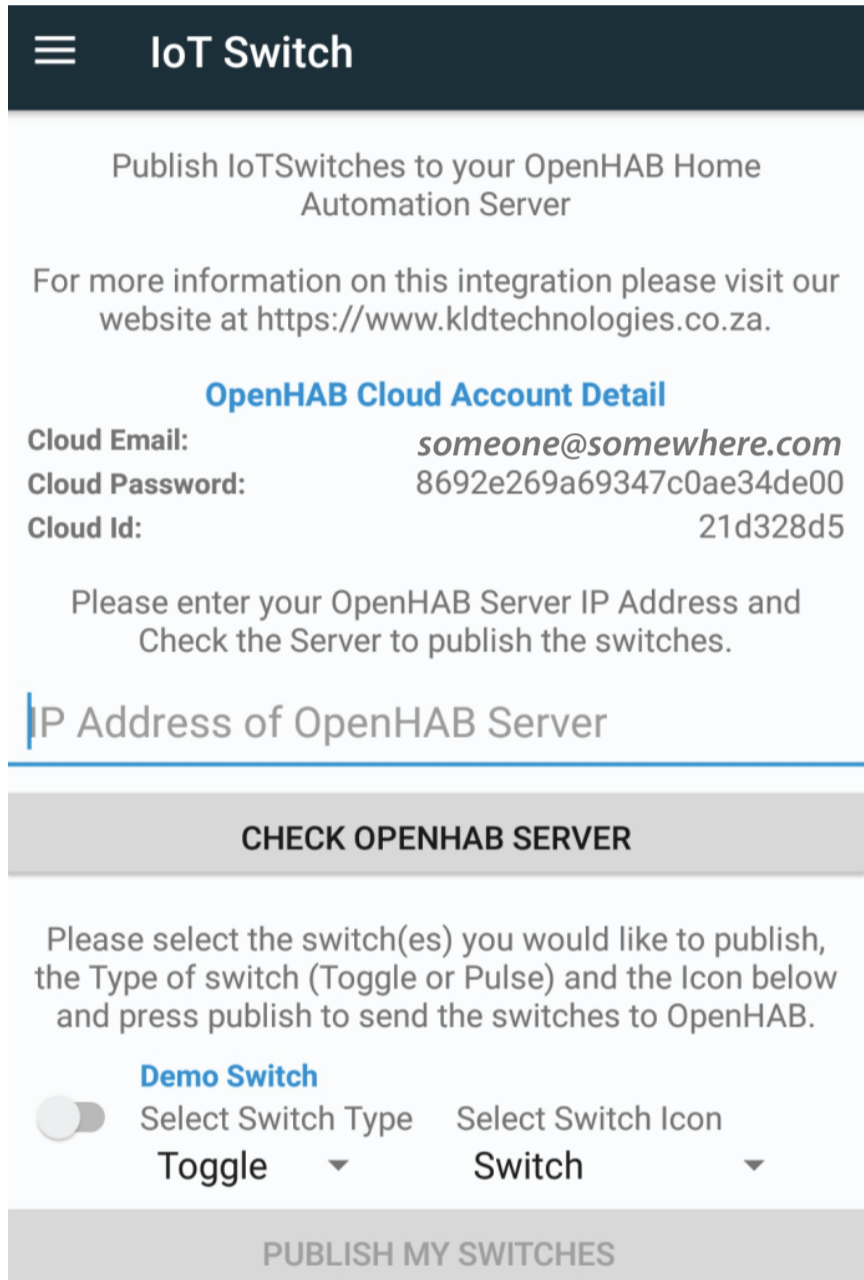
Once a cloud account has been created the OpenHAB Cloud Account Detail will become populated with the iiotsys™ Cloud account details, Cloud Email, Cloud Password and Cloud ID.

Download and deploy a openHAB virtual machine or openHAB image from our website. (Please see the tutorial videos on our website under openHAB for more guidance).

Enter the local IPv4 address for the openHAB server and click the CHECK OPENHAB SERVER button. Once the openHAB local server API is available and validated the PUBLISH MY Switches option will become available at the bottom of the menu and you will now be able to select IoT Switches listed that you wish to publish to openHAB server.

Enable the IoT Switches toggle button that you want to publish to the local openHAB server. Select the Switch Type as Toggle or Pulse and select a Switch Icon from the drop-down menu. Repeat this for all the desired IoT Switches.

Click the PUBLISH MY SWITCHES button at the bottom of the menu when done. A pop-up notification will advise you that the IoT Switches have been sucessfully been published to the openHAB server.

For each of the steps above confirmational and informational pop-ups will guide the process. Once the IoT Switches have been published to the local openHAB server they will be immediately available for control in the openHAB server Basic User Interface, HABPanel and openHAB Mobile Applications. Please see our openHAB tutorial videos for more information on those areas.
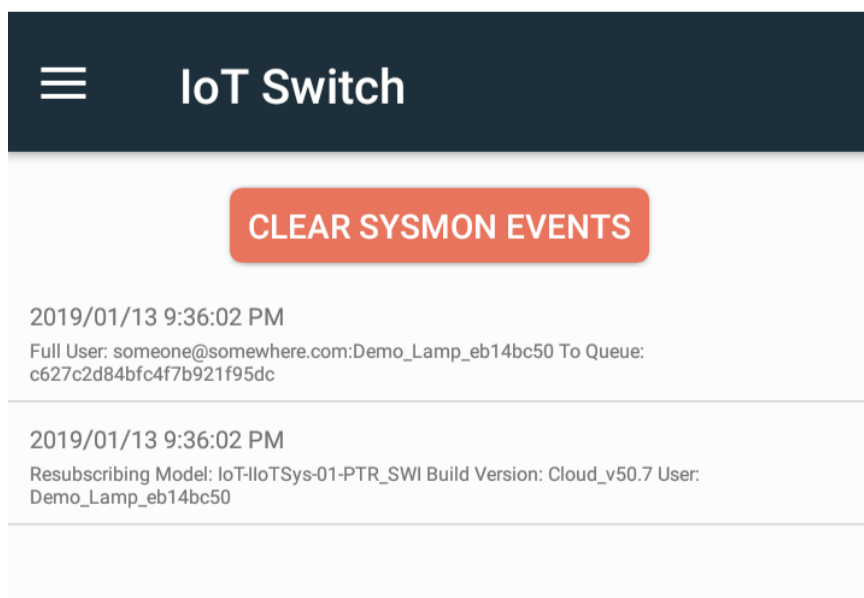
System Monitor

Click the System Monitor option from the Main Menu. The System Monitor provides registration activity of your IoT Switches. This information can be used the track potential issues in your WiFi environment like weak signals, power and Internet Failures.

To clear the Sysmon events simply click the CLEAR SYSMON EVENTS button in the System Monitor menu.

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Add Existing Switch

Please complete the following fields to add an existing (Already Configured) Switch.
Please use the detail obtained from another App user to complete Ip Address and Cloud Account detail.
All fields are required.

Current IP Address of the Switch

Name for your Switch

Description for your Switch

Please select a switch type, Pulse / Toggle or Pulse & Toggle. This may be different to the configuration of the same switch in another app

○ Pulse
◉ Toggle
○ Pulse & Toggle

Is this switch configed for cloud?

SAVE SWITCH

Getting current configuration from switch, this may take a moment...

Fetching Switch Information - OK
Fetching Switch Cloud Information
Creating Cloud Account(s) - OK

Successfully added the switch! Please note that it may take up to a minute for the switch and app to register with Cloud.

OK

Current IP Address of the Switch
Obtain this information from the owner of the IoT Switch or the local network. The Mobile device must be connected to the local WiFi (Station network) in order to add an existing IoT Switch.

Name for your Switch
Name for your Switch as it will appear in the Switch list (My IoT Switches), make this a logical name that can also be easily used for voice control.

Description for your Switch
Friendly description that helps further define the switch and appears when viewing the switch details. This can be the same as the Name entered above.

Pulse, Toggle or Pulse & Toggle
Switch type defines whether this in a on / off switch (Toggle) or a momentary trigger switch (Pulse) or both. The switch type can be changed after the switch has been configured in the edit switch pop-up menu.

Is this switch configured for cloud
Enable cloud function if more than local WiFi network control is required and / or the owner of the IoT Switch added it originally as a cloud enable IoT Switch and cloud scheduling is required.

Enter a email address and password of the owner of this IoT Switch. This option will only be available on the first IoT Switch that is added, thereafter the email address and password will be stored and remembered for every consecutive new or existing switch added.
Click SAVE SWITCH to add the IoT Switch

NOTE!
If the owner email address and password is not used the switch will be added, however it will not be able to be controlled.

Settings

Important Concepts:
In-app purchases are once off purchases and can be restored to any of the owners Mobile Android devices. In-app purchases are independantly available for Cloud Scheduling or Publish to OpenHAB features. IoT Switch Pro is a once off purchase that purchases all the present and future in-app features that will be and are to be released by KLD Technologies.

Function errors and data are automatically collected by KLD Technologies to improve the quality and end user experiences of our Mobile Application.

≡ **IoT Switch**

App Version: 1.56.13

Please only submit support data when requested to do so, this is to help us help you get the most out of the app and the Switch(es) you purchased.

SUBMIT SUPPORT DATA

Restore past in-app purchases for IoT Switch or, purchase IoT Switch Pro once off, to enjoy and leverage all current and future advanced features.

RESTORE PURCHASES

BUY IOT SWITCH PRO

Clear your APP Data. Please note that this will only clear the data for this APP user and will not affect the switch configurations.

CLEAR APP DATA

SUBMIT SUPPORT DATA
In addition to the function data collected, you may be requested to submit support data when encountering an error or unandled exception on your mobile application.

RESTORE PURCHASES
Click this button to restore and re-instate your previous purhases and re-enable your features following a Mobile Phone reload, new or additional Mobile phone or in the event of IoT Switch Mobile Application reload.

BUY IOT SWITCH PRO
Click this button to purchase the Pro edition features (as described in concepts above).

CLEAR APP DATA
Clicking on this button will delete ALL data stored in your Mobile IoT Switch application, this will clear ALL data entitling you as the owner of any previous switches added and you will also have to restore your purchases.

General

The Mobile Application is intuitive in use and layout, detailed information present within each function and pop-up is designed to guide and advise the user every step of the way, please be sure to read this information as you familiarise yourself with this application.

Gathered function data for our developers to improve the Mobile Application does not gather usage or personal information and is aligned to our privacy policy located on our website.

Please be prepared to submit data in the settings section upon request of one of our developers.